

silica particles coated with zinc molydate, which are not used in Applicants' low gloss powder coating composition.

While it is generally known that fillers can be used to reduce gloss, as shown by Dumain, it is not known how to reduce gloss without reducing the flow of the coating upon baking to prevent the formation of an "orange peel" surface or similar unacceptable surface textures. Applicants' invention provides for the use of a certain amount, type and size of spherical fillers to provide a powder coating composition having good flow properties on baking and forms a smooth finish acceptable for automotive use. Neither Maeda nor Dumain teach how to maintain adequate flow on baking of a powder coating composition to avoid "orange peel" but still form a matte finish.

Claims 1-9 were rejected under 35 U.S.C. §102 (e) as being anticipated by Tolliver et al. U.S. 6,217,252 taken in view of the evidence given in *Encyclopedia of Polymer Science and Engineering*. Tolliver is said to disclose a powder coating composition of a thermosetting or thermoplastic polymer and a method of adding spheroidal particles to the powder. The *Encyclopedia* article is said to disclose ceramic microspheres of a particle size within Applicants' invention.

Tolliver is not directed to a powder coating composition that provides a matte finish useful, for example, for the interior of automobiles, but is directed to a flame spray transportation composition that forms a finish having reflective elements, skid resistance elements or magnetizable particles at its surface. These particles can have any size or shape. These compositions are used to mark transportation surfaces, such as roadways, road barriers, parking lots, bicycle paths, bicycle parts, to form reflective surfaces or a skid-resistant surface or a magnetizable surface. Certainly, there is no teaching about reducing gloss of a powder surface without negatively influencing flow of the powder on baking to form a smooth surface acceptable for automotive use.

The *Encyclopedia* merely describes microspheres that are spherical particles that provide unique properties to plastics when used as fillers. This reference does not teach the use of microspheres in a powder coating to reduce gloss and does not teach that 5-50 weight percent of these particles, having the particular particle diameter as set forth in the amended claims, are to be used in powder coating compositions to reduce gloss and form a matte finish that has an acceptable appearance and acceptable flow properties.

Even if one did combine the two references, as suggested by the Examiner but not the references, the solution to the problem of forming a powder coating composition having a matte finish that does not have reduced flow on baking is not shown or suggested.

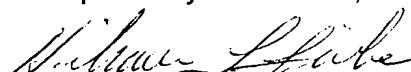
Claims 1-9 were also rejected under 35 U.S.C. §102 (e) as being anticipated by Muthiah et al. U.S. 6,017,640. This patent is directed to dual cure powder coatings that use a thermal initiator and a UV initiator for thermal and UV curing of the powder coating after application. Muthiah discloses that a wide variety of fillers can be used in the powder coating composition to lower gloss, but does not suggest the particular spherical particles in the amount, type and size claimed by Applicants. Further, there is no teaching or suggestion that only the use of certain fillers do not negatively influence the flow of the powder coating on curing to avoid finish having an orange peel appearance. The *Encyclopedia* reference merely shows microspheres of various diameters that can be used with certain plastics but does not teach that low gloss powder coatings can be formed that have good flow on curing.

Summary

In view of the foregoing amendments and remarks, Applicants submit that this application is in condition for allowance. In order to expedite disposition of this case, the Examiner is invited to contact Applicant's representative at the telephone number below to resolve any remaining issues.

If there are any fees due over and above the fee for the one month extension of time, please charge such fee to Deposit Account No. 04-1928 (E.I. du Pont de Nemours and Company).

Respectfully submitted,



HILMAR L. FRICKE
ATTORNEY FOR APPLICANTS
REGISTRATION NO. 22,384
TELEPHONE: (302) 992-6058
FACSIMILE: (302) 658-1192

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In showing the changes, the material to be deleted is in brackets and the material to be inserted is underlined.

Claim 1. (amended) A low gloss powder coating composition comprising consisting essentially of at least one thermosetting or thermoplastic resin selected from the group consisting of thermosetting resins and thermoplastic resins and spheroidal particles, wherein said spheroidal particles comprise 5 to 50 wt. % of the coating composition and wherein said spheroidal have a median particle diameter of greater than 10 microns and have a maximum particle diameter of about 50 microns and are selected from the group consisting of glass microspheres, ceramic microspheres, spheroidal minerals, polymer microspheres and metal microspheres and the resin is selected from the group consisting of saturated polyesters, unsaturated polyesters, acrylic resins, acrylate resins, polyester-urethanes, acrylic-urethanes, epoxy, epoxy-polyester, polyester-acrylics, epoxy-acrylics, polyamides, polyvinylchloride, polyethylene, polyethylene terephthalate, polybutylene terephthalate and polypropylene.

Cancel Claims 3 and 4.

Claim 5. (amended) A process of reducing gloss of a powder coating, comprising the steps of adding to a powder coating composition comprising a resin selected from the group consisting of thermoplastic resins and thermosetting resins between 5 and 60 wt. %, based on the weight of the composition, of spheroidal particles having a median particle diameter of greater than 10 microns and a maximum diameter of about 50 microns, said particles are selected from the group consisting of glass microspheres, ceramic microspheres, spheroidal minerals, polymer microspheres and metal microspheres and the resin of the powder coating composition is selected from the group consisting of saturated polyesters, unsaturated polyesters, acrylic resins, acrylate resins, polyester-urethanes, acrylic-urethanes, epoxy, epoxy-polyester, polyester-acrylics, epoxy-acrylics, polyamides, polyvinylchloride, polyethylene, polyethylene terephthalate, polybutylene terephthalate and polypropylene.

Cancel Claims 8 and 9